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ART. VI.—THE STONE AGE IN NOVA SCOTIA, AS ILLUSTRATED BY A COLLECTION OF RELICS PRESENTED TO DALHOUSIE COLLEGE.—BY THE REV. GEORGE PATTERSON, D.D., NEW GLASGOW.

During the last few years I have embraced any opportunities afforded me of collecting relics of the Stone Age in Nova Scotia, and have now concluded that the purposes of such a collection will be best served by presenting it to Dalhousie College, to form part of the museum of that institution. In handing it over, I desire, through the N. S. Institute of Natural Science, to place on record any points of interest noted in my explorations, or suggested by the articles discovered.

In older countries, these relics have been obtained principally from four sources :—

1. Burial mounds and old cemeteries.
2. Kitchen Middens, or the shell heaps and refuse heaps which mark the site of old encampments.
3. Cave dwellings.
4. Lake dwellings, as in Switzerland.

Nothing of the nature of the last two has ever been found in Nova Scotia, and there is no probability that there ever will. It is therefore to the first two of these that we are indebted for any remains of this primitive state of society found among us. As to the first, I have only in one instance come across a genuine prehistoric cemetery. It was situated on the Big Island of Merigomish, on the farms of Donald McGregor and James McGlashan, near the shore and close by the line between their farms. Attention was first directed to the place by Mr. McGregor, while ploughing up a portion of his field in which the vegetation was ranker than usual, turning up a human skull, pierced in front by a stone arrow-head, which still remained in its place. This interesting relic unfortunately was not taken care of, and has been lost. I did not hear of this discovery till

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some time after. In the meantime the place had been examined by other parties, and a number of stone axes and arrow-heads had been taken away. My first visit to it in 1874 was the commencement of my Archæological investigations. I did not examine the place with the same intelligence that I would have done since, but the circumstances just mentioned excited my curiosity, and on this and subsequent visits I examined the ground with some care, and with results of some interest.

At the spot where the transfixed skull had been turned up, though the ground had been a good deal disturbed before my visit, I found over a circular space of over six feet in diameter and to a depth varying from fifteen inches to two feet, a loose brown mould, mixed with fragments of bone, so decayed that not a complete bone could be found, and what remained could be crushed between the fingers. Below this I found fragments of birch bark in which the Indians were accustomed to enclose their dead, and below that was a hard subsoil, which plainly had never been disturbed. The soil around was also entirely different in color and composition.

There could be no doubt that this dark mould was from the decay of animal matter, and that the place formed a sort of pit into which a number of bodies had been thrown. From the ground having been thoroughly dug over before my visit, and the fragmentary condition of the bones, it was impossible to ascertain anything of the order in which the bodies had been arranged, but the transfixed skull with the other circumstances, seemed to indicate that these were the remains of those who had fallen in some battle, which had been here heaped together, "in one red burial blent." The shallowness of the pit shows that it must have been used previous to the arrival of Europeans, when sharpened sticks were perhaps the only instruments of digging. The same appears from the fact that no articles giving evidence of intercourse with civilization were found among the remains. Whether there had been any mound formed over them could not be ascertained. If there ever had it could have only been a very small one, and whatever

there was had been levelled by the repeated ploughings the ground had undergone.

A number of stone implements had been found before my arrival, and taken away. But on close examination I found more,—a small axe, evidently a war axe, which seemed freshly ground to a sharp edge, probably immediately before the encounter in which the owner had lost his life, some stone arrow and spear-heads, some fragments of rude pottery, some small copper knives, an imperfect bone fish spear-head, and a stone pipe.

On exploring around, I discovered that the ground toward the shore, within a circuit with a radius of from forty to fifty feet, and sloping gently towards the south-west, had been an old cemetery. In spots at irregular distances, but from two to four feet apart, on digging down I would find, at a depth of from six to ten inches, a layer, perhaps about two inches thick, of a rich, dark, velvety mould, intermixed with fragments of bones. In some cases this extended a length of less than three feet, with a breadth of, perhaps, half as much, indicating, as I judged, the grave of a single body; but in at least one instance the layer was of much greater extent, as if the remains of several bodies were joined together. The bones were so decayed that, though this might have been owing to my ignorance of anatomy, only in a few instances could I recognize what they were. There was only one case in which I could trace the position in which the body lay. That was on its side, in a crouching position. In this case the skull remained in fragments, and had I known the modes now adopted by Archæologists for joining the fractured portions of skeletons, I might have gathered them and restored it, so as to show its original shape. As it was, I was struck with the great thickness of the pieces, and brought some of them away; but I have since learned that this is not uncommon among barbarous tribes.

In all these cases, with a single exception, I found prehistoric implements, stone axes, knives, arrow and spear-heads, portions of bone spear-heads, small copper knives, with fragments of pottery. It thus appeared that the people to whom these remains

belonged had the practice, common among so many primitive races both in the old and new world, of burying with the dead the implements which they were accustomed to use when in life.

But I found one exception to this, which otherwise was curious. In this case instead of the mould referred to there was a layer almost entirely of ashes, with fragments of bone seemingly burnt, and none of them an inch long. This covered a smaller space than in the other cases, being of an elleptical shape, and speaking from recollection, scarcely two feet in the longest diameter, and a little over half as much in the shorter. In this there was nothing in the shape of a prehistoric implement except a fragment of a broken stone spear-head. In explanation of these circumstances I could only suppose that we had here the remains of some poor captive who had been burned.

In connection with this I observed in my digging indications of fire for some unexplained purpose, ashes, small pieces of charcoal and burnt earth. Possibly this might have been caused by white men burning the wood in clearing the land, but I observed also stones, which seemed to have been subjected to fire for some time, as the stones in a chimney or a hearth. I regret that I did not carefully examine into this point. I may observe, however, that I picked upon the ground a number of stone flakes such as are formed in the making of arrow-heads, and such as I have always found on the sites of old encampments. This would indicate that the place had been occupied after the interments, and perhaps by another race. This would account for some of the stones having the appearance of being acted on by fire, perhaps from their having been used as hearth stones.

The stone implements found in this cemetery present no particular difference from those found elsewhere. The arrow and spear-heads are generally well made. Some of them are of jasper or other fine grained mineral, such as are found in the trap rocks of the Bay of Fundy, and they exhibit a variety of forms exactly resembling those found in other collections both in the old and in the new world. There are also what I regard as knives intended to be grasped in the hand and drawn to the person as is done by the Mic-macs to the present day. There is one curious

implement of which I have seen nothing similar. It is four-sided and rectangular, each side at the broadest being a little over one-fourth of an inch, from which it tapers to a blunt point. Part of the larger end is broken off, but what remains is $3\frac{1}{4}$ inches long. The use of this I cannot determine. It may have been intended as a perforator, but this does not seem probable, as it is carefully polished into a quadrilateral, which would rather tend to render it unsuitable for such a purpose.

The copper knives found here deserve notice. It is known to all Archæologists that the Indian tribes bordering on the Great Lakes had learned to use the native copper, which is found abundantly in the neighbourhood of Lake Superior for knives and a variety of other implements. It is also known to our geologists that native copper existed in small quantities in Nova Scotia, particularly in the trap rocks of the Bay of Fundy. But this was the first case in which it was found that the Aborigines of this Province had learned to turn it to practical use. The implements consist of small knives formed by hammering, which also served to harden the metal. There are three specimens in the collection beside pieces of copper hammered out as if intended for the formation of similar ones. A few others I have given to other collections. About the same time, articles of copper of prehistoric origin were found in Lunenburg County, principally however what has been supposed to be small needles or piercers, and beads. I believe, however, that more copper knives have been found in this cemetery than in all the rest of Nova Scotia.

The bone fish spear-heads are of interest. One nearly perfect was taken from the pit which I have described. Both ends have been broken off, but a length of $3\frac{6}{16}$ inches remain. It is flat, about one-eighth of an inch thick, and in width from half an inch tapering to a point. It shows very delicate workmanship. On one side are cut three notches in a descending direction, so narrow and even, that it is difficult to understand how the old workmen could have done it with any tools they possessed. The points at the lower edge of these would form barbs, taking the firmest hold. Between these notches the edge is very finely serrated, which would serve to give the implement additional holding

power. The others show care and skill in the formation of the barbs. But a point of special interest is that near the base they have each a small hole. To this was attached a string, which doubtless had a float attached to the other end. When the fish was struck the head became detached from the shaft, and he went off with the line. But the float would retard his progress, and exhaust him, or perhaps bring him to the surface, while the fisherman could by it easily follow him up. This mode of capturing the denizens of the deep is still practised by the Eskimo and other barbarous tribes. There are some other specimens of bone, horn or ivory, the use of which I am unable to determine from their being so much decayed or being in fragments.

The pieces of pottery found here did not exhibit any features of special interest. Some of them are blackened as if they had been suspended over a fire.

We must, however, particularly notice the stone pipe mentioned. It is of a micaceous clay state, very hard, and yet besides the drilling of the bowl, a hole is drilled in the ~~stone~~ stem not more than the three-sixteenths of an inch in diameter for a length of nearly two inches. Along the upper surface at each side a fine groove has been cut. I fancy that any of our modern mechanics with all their improved implements would be puzzled to do the same work. But the most curious circumstance remains to be mentioned. The form of it is not like that of any hitherto found in Nova Scotia, nor do I find any figured like it in the account of the collection of the Smithsonian Institution, but Sir William Dawson directed my attention to a collection of relics made up the Ottawa, purchased for McGill College, in which were several pipes if not exactly the same in shape, yet plainly of the same type. It may be worth noting that in no case did I find any thing like wampum, so frequently found in Indian graves.

Some of these circumstances raise the question whether these might not be the relics of a race who occupied the ground before the Micmacs. But this is more strongly suggested by another fact. Almost the only bones found here that could be recognized are the two jaw-bones, one of them plainly that of an old person, as indicated by the manner in which the teeth are worn down. Both are

imperfect, but each in its small size and the slight diverging angle of the sides stands in contrast with the true Indian jaw. This would suggest a people of small size like the Eskimos. It is now believed that this race formerly extended much further south in America than they now do, occupying indeed much of the New England coast. It is also a received opinion that the Algonquin race of which the Micmacs are the tribe farthest to the North and East, came from the South West, and the tradition of the latter is to the same effect. In such a migration they must have come into collision with the Eskimos, and driven them before them. Charlevoix in the map accompanying his work sets down the land to the North of the St. Lawrence as "Pays des Esquimaux," he mentions also that they were to be found in summer on the coast of Newfoundland, and describes the Micmacs in his day as maintaining a constant warfare with them, and these remains may be memorials of some such conflict. It is worthy of note that though I made several trials I found no evidence of any burial further from the shore than the pit, where was formed the transfixed skull. It really appeared as if the race who used this cemetery had here deposited their warriors dead, and returned to the spot no more.

The evidence of these remains being of a previous race I admit to be scanty. But the point is worthy to be kept in view in future explorations.

The chief source, however, from which in this country we obtain relics of the stone age, is the kitchen middens (Kjokken moddings, as they are called in the North of Europe) or those collections of shells and other refuse, which mark the site of old encampments. These are to be found in every part of the Province. Indeed, judging from those places I have had the opportunity of examining, I believe that every harbor and the embouchure of every considerable river will be found to exhibit to a greater or less extent such evidence of having been occupied by the people of the stone age. Thus, on the north shore, I have found them in Pictou Harbor, on both sides of the mouth of the East River, and at Middle River Point. In Merigomish Harbor there is scarcely an island or a point on which such

remains are not to be seen. I have found them on Big Island, Point Betty Island, the smaller islands known as the Pig Islands, and on the shore, particularly on the farm of the Rev. A. P. Millar. Farther East I have found them at Antigonish Harbor and at Tracadie, and to the West at Tatamagouche, and I have heard of such at Wallace. On the South Shore there is or was a place on what was known as Bauchman's Beach, in Lunenburg County, which had all the appearance of being the site of an ancient arrow-head manufactory. But kitchen middens I have found on the LaHave, near Bridgewater, and at Port Medway, in the same County. I am informed that they are to be found at Port Joly and on Mr. Nutt's Island, in Shelburne Harbor, and I have myself observed them at more than one point at Barrington. On rivers near their embouchure I have particularly observed two, one a little above Sherbrooke, on the St. Mary's River, on the farm of Mr. George McIntosh, and the other on the Lequille River, Annapolis County, on the farm of Mr. George Hoyt. The situation of these two spots is very similar, and the reasons of their selection are easily detected. Both are just below falls or rapids in rivers abounding with fish, and thus in the best position for capturing them, particularly in their ascent or descent. Both are on low level flats on the edge of the river and backed by high banks which afforded shelter from the winds.

Where the coast is not indented by harbors the inhabitants naturally resorted to places in the interior, but mostly on the borders of rivers, navigable at least by canoes. Thus, on the Bay of Fundy, where there is the great wall of trap from Blomidon to Digby Gut, we find their places of resort on the Gaspereaux River, and I have heard of implements being found elsewhere. So in Cape Breton we find evidence of the occupancy by the people of the stone age at Lake Ainslie, and at various points on the Bras d'Or Lake. And probably a careful examination would show similar results throughout the other parts of the Province.

Lescarbot mentions that the Micmacs were in the habit of retiring to the interior in winter, and encamping on the borders

of lakes. Such places will now be found so overgrown with trees and bushes that no traces of their occupancy will be discernable. But along the rivers when the land is cleared stone implements are picked up at various points. Thus I have obtained them on the St. Mary's River, near the Forks, and on both the East and West Branches. On the Roseway River, about fourteen miles from Shelburne, the stream divides forming an island, on which have been found a number of implements, principally goudges. I have seen a number, some of them rather singular, which were gathered on the Musquodoboit; and I have heard of a place on the Shubenacadie, not far below the railway station, which has yielded a number of such articles. But except at such chosen spots as those I have mentioned near the embouchures of the Lequille and St. Mary's Rivers, so far as I have observed, the relics found in the interior have not been in such quantities as to indicate continued occupancy.

The kitchen middens on the sea coast are in most cases easily distinguishable by the quantity of shells which they contain. Up the rivers they are usually known only by finding implements or the stone chips left in the formation of arrow heads. Even of that which I have mentioned on the Lequille River, though Mr. Hoyt has picked up on about three-quarters of an acre of ground between fifty and a hundred implements, yet the soil does not differ in appearance from that around, though its present occupiers notice a greater fertility in it which is retained through successive croppings. But on such places on the coast we will generally find on the surface a distinct layer, varying from two or three inches to fifteen or twenty inches in depth, composed sometimes almost entirely of shells of edible mollusks but genally mixed with soil formed by the decay of the other refuse from their camps. In no place that I have seen does there appear any thing like the quantities, shown in other countries, where accumulations almost entirely of shells to the depth of two, three or even more feet, will be found extending over acres of ground. What I have seen might more properly be called refuse heaps, of which shells formed an important part, and they covered but very limited areas, the largest not exceeding three-quarters of an

acre, and I have seen instances where such a layer of not more than two or three inches deep was found covering a circuit of not more than twenty or twenty-five feet in diameter, as if it had been occupied by a single camp.

The first question which arises is as to the geological age of such deposits. Some Archæologists of the United States have claimed to find relics of man in situations, which would indicate his existence previous to the glacial age, and many European Archæologists have drawn similar conclusions regarding the antiquity of man in the old world. Whether these inferences be correct as to these countries or not, in Nova Scotia, as Dr. Honeyman has pointed out, the remains have always been found in such situations as clearly showed that they were not of glacial age. They may be in the vicinity of deposits of this kind, but they are not of them.

Another question may be noted here. In the old world Archæologists from the nature of the implements found, and their position when discovered, have divided the stone age into two periods, distinguished by the use of chipped and polished stone implements, and known as the Palæolithic and the Neolithic. Some American students, carried away by the authority of their names, have sought to find the same in America. But I believe that American Archæologists are now generally coming to the conclusion that in the new world there is no ground for such a distinction. We have always thought the idea irrational in itself. Instead of the making an implement by chipping being a simple act, which could be performed by beings in a low state of development, and polished implements, being the product of skill requiring a more advanced intelligence, it is rather the reverse. The grinding of a stone to an edge by rubbing it on another is the simplest act, requiring the least amount of thought (see No. 12) while the formation of an arrow-head is a work of considerable skill, so much so that scientific men only learned how it was done from savage tribes, who still practised the act. At all events, in Nova Scotia the rudely blocked out implements and the perfectly formed ones, both chipped and polished, are found together in a way that precludes the idea of their being the product of different eras.

Coming more particularly to our Nova Scotia kitchen middens, it must be noticed that in no case, so far as I am aware, have they been examined with the care with which scientific men have treated those in other countries. Besides, the ground has in most cases been ploughed over, in some instances frequently, thus changing its condition from what it was when abandoned by the Indians. But they will still amply repay investigation. The majority of the implements in my collection have been obtained from one to which I wish more particularly to refer.

It is situated on the farm of the Rev. A. P. Millar, Merigomish, in the rear of a point projecting from the south side of the harbor. One has only to look round to see that the spot has been selected with a skilful reference to the circumstances and wants of the people of that time. It was close upon the waters of the harbor then teeming with fish, and not far from the open Gulf. The creeks and small islands around swarmed with wild fowl, while behind them was the forest abounding in game. The point has an elevation of perhaps 40 or 50 feet. It has been wearing away, and was probably higher in former times. Being also then covered with wood it would still better serve as a shelter from northerly winds. From the point the ground slopes gently to the south till it is little above high water mark. On the face of this slope over a space of perhaps three quarters of an acre are found the shells and other refuse of a Kitchen midden. At the foot there is a little stream, which would have afforded fresh water. Where it reaches the shore a little cove makes in, which would have suited admirably for drawing up their canoes, and it may be observed that in digging at the point there was found pieces of partially decayed birch bark, which had been covered by earth washed down from the higher ground.

The layer of shells and refuse referred to is on the level only from six to eight inches deep, where the ground had been cut out by a small run of water from twelve to fifteen, and it thins out to nothing at the outer edge. The shells were mostly if not entirely the common oyster (Ostrea Virginiana) the quahog (Venus purpurea), the clam (Mya Arenaria) and the mussel

(Mytilus edulis). I confess I did not look for others. My attention was recently directed to the subject of smaller shells, by a letter from Mr. W. F. Ganong, enquiring if I had ever found the English periwinkle in such places. In the few observations I have been able to make since, I have not found any other than those mentioned.

From this place have been obtained about half the objects in the present collection, besides a number given by me to other collections and a number taken away by other parties.

Referring more particularly to the collection as a whole, it will be seen to contain nearly 300 objects of Archæological interest. Of these over 250 are connected with Nova Scotia, representing the stone age of its aboriginal inhabitants. These are so varied as to form an almost complete representation of the articles found among the remains of the native races of North America, thus exhibiting their life at the period referred to, so far as that can be done by their implements and other relics. Besides these there are a number of articles of a similar character, not only from the United States, but from Scotland, the West Indies and particularly the New Hebrides Islands, where the stone age continued till very recently, and on some of which it has scarcely yet passed away.

They have been arranged according to the classification adopted in the account of the Archæological Collection of the Smithsonian Institution, prepared at the time of the Centennial Exhibition. In noticing the articles more particularly I shall follow the order there observed, as we will thus be enabled to see how far the various kinds of implements found elsewhere are represented in Nova Scotia, and thus illustrate by comparison, the condition of its inhabitants at that period.

I.—STONE.

A.—FLAKED AND CHIPPED STONE.

1. *Raw Material.*—The collection shows, particularly from Bauchman's Beach, Lunenburg County, some of the rocks brought from the trap rocks of the Bay of Fundy, in nodules rounded by

the action of the waves rolling them against one another, just as they are found at the foot of the cliffs there, or partially operated on, besides a great variety of stone chips and flakes from different places, (Nos. 124, 170, 225.)

2, 3. *Irregular flakes of obsidian*, etc., produced by a single blow, and two edged narrow flakes of obsidian produced by pressure, etc. We have nothing to represent these from Nova Scotia but there is in the collection a piece of a small obsidian knife from Mexico, (No. 173.)

4. *Unfinished Arrow and Spear-heads.*—Of these the collection affords an abundant representation, (Nos. 99, 114, 115, 150, 246.)

5. *Arrowheads.*—The collection contains over sixty specimens from Nova Scotia. The majority of these are from Merigomish Pictou County, but there are also some from St. Mary's, Antigonish, Annapolis, and particularly Lunenburg County. In the material of which they are composed, there is a difference between those obtained on the North shore of the Province, and those from the South and West. The former are generally composed of hard flinty slate, felsite, quartzite, or other of the rocks found in the metamorphic rocks in the mountain range in the interior, and occasionally white quartz. The latter are generally formed of the agates, jaspers and other fine grained minerals found in the crevices of the Trap Rocks on the Bay of Fundy. The action of the weather brings these down to the foot of the cliffs, where being rolled together by the action of the waves, they form nodules of from two to four inches in diameter. These seem to have been a favorite material for the formation of arrow heads. In some respects they are very suitable for the purpose. They are hard, fine grained, and in cleavage form sharp edges, but not being stratified they are apt in splitting to break into short pieces, so that the implements formed of them are generally small, though sometimes very pretty.

These are found of all shapes that are represented in other countries, some being leaf shaped, with base rounded or pointed, some triangular, some straight-sided with base more or less concave, some notched near the base, some are stemmed in

considerable variety of forms, and some are barbed as well as stemmed. There is a piece of one from Yarmouth County (No. 174) which is interesting as giving evidence of having been wrought into a spiral form. There is what is set down as a spear-head from Michigan (No. 105) which shows the same peculiarity. Such implements have been regarded as showing that the aborigines had discovered the principle of the rifle gun.

Besides the specimens from Nova Scotia are several from Massachusetts and New Jersey, (Nos. 158–164), one from Collingwood, Ont., (No. 165), and one from Aberdeenshire, Scotland, (No. 166), which will show the similarity of the workmanship of the people of the stone age in widely separted countries.

6. *Spear-heads.*—These are of the same forms as the arrow-heads but larger. Some fine specimens are in the collection, some leaf-shaped with rounded base and some stemmed (Nos. 100–104.) Some instruments passing under this name may have been used as cutting or scraping tools.

7. *Perforators.*—Two implements in this collection, both from Annapolis, are set down under this name, but both have the points broken off. One (No. 282) has a broad base, but shows evidence of having been worked to form a point. The other (No. 278) though having something the appearance of an arrow-head, appears really to have been intended as a perforator.

8. *Scrapers.*—Thick flakes of flint, &c., worked at one extremity, sometimes at both, into a convex or semi-lunar edge. Such are still used by the Eskimo in cleaning skins, and in scraping and smoothing horn, bone, wood, &c. Two specimens, both from Annapolis, (Nos. 283, 286.) But a number of others probably also served the same purpose.

9. *Cutting and sawing implements.* — There are several implements of this kind from Nova Scotia (Nos. 91, 249.) But a crescent shaped one from New Jersey is worthy of special notice (No. 106.)

10. *Dagger-shaped implements.*—Not represented.

11. *Leaf-shaped implements.*—"Perhaps mostly used for scraping and cutting. Some may be unfinished tools." A number of such in the collection (Nos. 94, 97.)

12. *Large flat instruments usually ovoid in shape,* supposed to have been used as spades or hoes. One fine specimen from Merigomish, 7½ inches in the longest and 3¼ in the shortest diameter (No. 85.)

B.—PECKED, GROUND OR POLISHED STONE.

1. *Wedges or celts.*—There is a great variety of these, though in the catalogue they are generally named axes. They are from different parts of the Province, though the majority are from the kitchen midden at Merigomish, previously described. Our weather, with its frequent freezing and thawing in winter, seems to act severely upon them, when on or near the surface of the ground, so that they become rough or fretted, and portions spall off. So that we do not generally find them with the fine polish, that we see in many from other countries. They are formed of various hard rocks, which may be found among the older Geological formations in Nova Scotia, or fragments found in the drift. Their shape seems in many cases to have depended on the original form of the stone, (see No. 36.) In one from Merigomish (No. 12) we see the simplest workmanship, where there has been only a little rubbing or grinding at one edge, and the stone otherwise left in its original condition. But others have been carefully and laboriously brought into a regular shape, (No 50, from East River of Pictou.) They are of all sizes, from an inch and a half to seven inches. A number are two edged, showing that in use they were to be hafted as axes, (No. 22, Merigomish ; 55, Bauchman's Beach ; 268, South Pictou.)

Some are flat on one side, and are known as fleshers or bark peelers, (No. 65, Merigomish.)

There are also one from Scotland (No 60), two small but finely polished ones from Trinidad (Nos. 61, 62), several from the New Hebrides (Nos. 57, 58, 59). They show the similiarity of form of these implements in widely separated countries, that from Scotland being scarcely distinguishable from one from Erromanga. There is one hafted according to the mode customary till recently on that island, (No. 179.)

2. *Chisels.* In the collection some are set down as axes

that others would set down as celts or wedges. No 269 answers the description given, though it is thought more likely to have been used as a striker or pogomakunn. Under this title perhaps also may be classed a peculiar implement from Lake Ainslie, C. B., (No. 79). It is about 8 inches in length over all. In the front it is brought to an edge, but the rest is about $\frac{5}{8}$ of an inch thick throughout. At the base, it is $3\frac{3}{16}$ inches wide, but gradually decreases almost to nothing.

3. *Goudges.*—These are of three kinds: 1. Those slightly hollowed out at the cutting part, as No. 73, $10\frac{1}{2}$ inches long from Aneiteum, and Nos. 74 and 75 from St. Mary's, $13\frac{1}{2}$ and 14 inches long. 2. Those which have a concavity, of which there is a beautiful specimen from Lake Ainslie, C. B., (No.). These were probably hafted and used as adzes and employed in hollowing out wooden vessels, fire having been first applied. This one is partially grooved transversely seemingly for this purpose. And 3. Those hollowed out through their whole length. Of these there are one from Shelburne, one from St. Mary's, and one from Cape Breton, besides one from Massachusetts. These seem to have been used for tapping and gathering the sap of the maple trees. Some of the axes have the cutting edge ground in a slightly goudged form (No. 263 from Antigonish County).

4. *Adzes.*—None of the implements are marked as such, but probably some were hafted and used in this manner.

5. *Grooved Axes.*—I have obtained but one specimen of these (No. 52 from St. Mary's.) It is $7\frac{1}{4}$ inches long.

6. *Hammers*, including hammer stones and hammer heads. The collection contains a number of stones of hard composition, which on their edges show that they have been used as such, (Nos. 50, 167). Others show that they were manufactured and perhaps were intended to be hafted as the axes, (Nos. 67, 70.)

7. *Drilled Ceremonial Weapons.*—No specimens.

8. *Cutting Tools.*—Some are marked as knives that in other collections might be marked as celts, because from their shape they are fitted and seem intended to be held in the hand in the manner the Mic-macs hold their knives to the present day, drawing them towards them, (No. 8, Merigomish Cemetery, No.

80, Sherbrooke). But besides these there are quite a number of implements undoubtedly intended for cutting (Nos. 10, 81, 84, 107, etc). One crescent shaped one from St. Mary's (No. 276), deserves particular notice.

9. *Scraper and spade-like instruments.*—There are no implements in the collection like those represented under this title.

10. *Pendants and sinkers.*—Besides those pendants supposed to be intended as ornaments there are two of the class supposed to have been used as sinkers for nets, one from Shelburne County (No. 88), and one from Annapolis (283.)

11. *Discoidal stones and implements of kindred shape.*—There are no stones here exactly of the form figured in the Smithsonian report, but stones in their natural state have been picked up on the site of old encampments in the shape of flattened spheres, which seem to have been sought after for some purpose (No. 168, Lunenburg, and 169, Merigomish). But besides there is a large stone from Cape Breton (No. 264), ground to a perfect oblate spheroid, 5 inches in the longest diameter, and $3\frac{5}{8}$ in the shortest, seemingly a chung-ky stone. Another from the same quarter, more flattened, partly ground, but not brought to such perfect shape, may have been used for the same purpose. But both may have been used for grinding meal.

12. *Pierced Tablets.*—Of this class the object of which is not quite certain, there is one specimen from Green Hill, Pictou County (No. 86).

13. *Stones used in grinding and polishing.*—There are no stones with grooves such as figured, but we have in No. 66, from Merigomish, a good specimen of an instrument with a smooth even surface, like a flat iron, probably used for polishing or as a muller for grinding pigments, and probably some of the other implements were used for the same purpose.

14. *Stone vessels.*—None.

15. *Mortars.*—Have found none yet, but it is evident that they must have been used.

16. *Pestles.*—There is here one specimen from Barney's River, Pictou County, (No. 72) weighing $8\frac{3}{4}$ pounds. This stone is almost in its natural state, but has a distinct groove cut round

the upper end for suspension, probably to be used with a spring pole.

17. *Tubes.*—None in this collection, but it may be mentioned that there is one in the Provincial Museum, showing that in whatever way they were used by other tribes, the Mic-macs had the same practice.

18. *Pipes.*—I have not found many pipes in Nova Scotia and none with sculptured figures upon them, as is common farther west, but I have heard of some being found by other collectors, and there is one in the collection from Collingwood, Ont., in which the bowl forms the representation of the head of an animal (No. 178). Besides the one already described from the cemetery on the Big Island of Merigomish, there are two from Nova Scotia and one from Metapedia, N. B. One from Big Island of Merigomish is simply a bowl roughly formed of sandstone, and is probably modern. The other two, one from Tatamagouche (No. 176), and the one from Metapedia, N. B. (No. 287), exhibit what I regard as the typical Mic-mac pipe. It is known that each tribe of Indians has its form of canœ, snow shoe, etc., and I believe also of pipes. It consists of a round bowl upon a ridge like a keel from one and a half to two and a half inches long, from one end of which a hole is bored to the bottom of the bowl. This ridge is on the lower side again cut out so as to form a narrower keel, which is pierced with holes, probably for the receiving of a string by which it might be suspended from the neck. Of the pipes which I have seen both in Nova Scotia and New Brunswick, so large a majority were of this form that I believe it to be representative. On the ridge of the one from Metapedia there is delicately incised ornamental work, in waving lines and other shapes.

But there is an interesting stone found at Annapolis (No. 281), out of which the manufacturer had begun to make a pipe. He had drilled through what he intended as the stem, and also from the top, till the two perforations met, and had partially drilled the bowl. But the stone had split from some cause and was rejected. It also shows marks of attempts to cut it by sawing. The holes drilled are about three-sixteenths of an

inch in diameter, and are striated longitudinally. Altogether it shows that it was the practice first to drill the bowl and stem, and afterward cut down the stone to the shape intended.

19. *Ornaments.*—Of these may be noticed two pendants (No. 87, 88), each with a hole near the end, for suspension, and probably intended as breast ornaments, the first from Barrington, the last a flattened oval with rounded edge, very exactly formed and beautifully polished, from Lake Ainslie, C. B.

20. *Sculptures.*—None.

In addition to these there are a number of articles which cannot be classed under any of these heads. I notice the following: 1.—"A fire stone" from Merigomish (No. 277), a lump of iron pyrites, used in striking fire. 2.—A small flat stone from Annapolis (No. 280), one and three-quarter inches long by one and a half wide, with a series of small notches along one edge of each end. The only use I can imagine of this would be for making a series of lines on their pottery. 3.—A figure from Upper Miramichi (No. 265), somewhat resembling a woman with a shawl over her head. The stone is in its natural state, but exhibits one of those curious forms sometimes found and which ignorant tribes are often disposed to invest with sacredness. From the representation of an aged Indian, it is believed that this was a sacred stone used by their old Shamans. 4.—Two coffin-shaped stones, one broken from Merigomish cemetery (No. 90), the other whole from West Cornwallis (No. 89), which have been ground to their present shape. As we can discover no practical use which these serve, we must suppose them connected with some fancy or superstition.

II.—COPPER.

Native copper is found in small quantities in Nova Scotia, and the people of the stone age had learned that by hammering it could be formed into small knives or other implements, and in the process become hardened. Besides the specimens from the Big Island cemetery already described (No. 227–230), there are from Bauchman's Beach, Lunenburg County, what appears to have been intended as a piercer, with some smaller pieces perhaps

intended for beads or ornaments (No. 231). Thus that period was in a measure a copper age.

III.—BONE AND HORN.

To these we must add ivory. The walrus frequented the Northern coast of Nova Scotia till a recent period, and its tusks afforded excellent ivory, which the people of the stone age formed into various implements. Few implements of this kind have been collected in Nova Scotia, partly from their perishable nature, and partly from their not having engaged the attention of collectors. But this collection contains several that are quite interesting.

1. *Bone piercers* (Nos. 199–201, 274), from Merigomish. Unfortunately all these have the butt ends broken off, so that we cannot say whether they had holes in them like an eye for fastening the string.

2. *Bone fish spear heads.* I have already referred to those from the Big Island cemetery (No. 211–214), but these are portions of several others from Merigomish (No. 204–207).

3. *Two ivory harpoon points* from Merigomish (No. 197, 198), similar to those used by the Eskimo at the present day for taking seals, walruses and even whales. One end has a slit transversely to receive the stone point (for which the Eskimo have now substituted iron). At the other end is a hollow for the reception of the ends of the shaft, and a projecting point on each side to serve as a barb. In the centre is a hole. By a cord from this it is attached to the shaft in such a manner, that it can be disengaged the moment it strikes the animal. When it started off, the pressure upon the centre of the implement caused it to turn at right angles to the direction of its entrance, like a toggle, and Capt. Parry tells us that no barb could hold as firmly. The Eskimo attach an inflated seal skin to the other end of the line, which serves to bring the animal quickly to the surface of the water, and doubtless our stone age men used a similar device. Indeed these implements show either that the Eskimo then inhabited the Northern shore of Nova Scotia, or that the Micmacs had the same mode of hunting the larger sea animals.

4. *Several implements of which the use is uncertain*, one from a mussel bed (so called) in Merigomish Harbor (No. 203), and two from the cemetery referred to (No. 209, 210), besides pieces of ivory (No. 216.)

5. *An unknown instrument of horn or ivory* from Merigomish, (No. 188.) It is eight inches long, flat in the centre, where it is seven-eighths of an inch thick, with rounded edges, and one and five-eighths of an inch wide at its greatest breadth, and tapering at the one end to a blunt point, and at the other forming a rounded edge. It may have been used as an ice chisel.

6. There are three *instruments of walrus ivory*, formed by sawing the tusk longitudinally from both sides, (Nos. 185—187.) They seem to have been used as pressers in forming arrow-heads, but it is possible that they may have been used as diggers by being attached to a handle, or even as strikers. With them is a tusk unmanufactured (No. 195), which I take to be the tooth of a spermaceti whale. This animal was formerly found at least as an occasional visitant in temperate climates, and its capture by the Micmacs is of interest.

IV.—SHELLS.

I have found no shell implements in Nova Scotia, but there are in the collection some very noticable shell adzes from the New Hebrides, (Nos. 180, 183.)

V.—CLAY.

For some time it was believed that the Micmacs made no pottery in pre-historic times. But though no perfect vessel has been found, yet considerable quantities of fragments have been discovered, sufficient to show the state of the art among them. They are fully represented in this collection. The first found were in the pre-historic cemetery on Merigomish Island (No. 222), but afterward fragments were found in kitchen middens (No.. 223), later still larger quantities were found at a spot on the Lahave River above Bridgewater, in Lunenburg County, where there seems to have been a regular manufactory (Nos. 251,

255). These are of red or brownish grey color. The clay is seen to have been tempered by pounded granite being mixed with it. They vary in thickness from three sixteenths to one half of an inch. Some show that they belonged to vessels of large size. They show that the vessels were generally of the gourd shape, though one piece especially shows that the bottom had been prolonged to a blunt point. Portions of the mouth show sometimes a lip vertically straight, but in most instances it is curved outwards. Some have ears showing that they were to be suspended over the fire. There is considerable ornamentation on the outside on the upper part, but I have not been able to trace any design in the marks. They consist sometimes of rows of dots made by some sharp pointed instrument, and again of such impressions as might have been made by the nail of the forefinger. Sometimes they were made by an instrument about two inches long with small teeth, with the points of which an impression was made in one row, then the one end was swung around, and a second made at an angle with it, then the other end was moved in the same way, and thus a zigzag formed. Sometimes two lines were drawn up and down meeting at a sharp angle at the top suggesting the shape of the wigwam. Some show scratches on the inside, the cause of which does not appear.

Of course these are all coarse and do not in any respect compare with the specimens found in many parts of the West and South.

With these from Nova Scotia are exhibited specimens from Hochelaga, the site of the present Montreal (No. 224), a broad shallow vessel from the New Hebrides (No. 256), with portions of one of gourd shape from the same quarter, though Sir John Lubbock informs us that the people of these islands did not make any pottery.

VI.—WOOD.

No prehistoric objects of this material have been found in Nova Scotia, so far as known to me. Our climate would in most instances be fatal to the preservation of them.